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PATENT SPECIFICATION



DRAWINGS ATTACHED

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Inventor: GEORGE DANIEL BLUNT

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COMPLETE SPECIFICATION

Improvements in Lifting Platforms

We, MARTIN WALKER LIMITED, of 145 Sandgate Road, Folkestone, Kent, England, a British Company, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a lifting mechanism for raising loads from ground or other lower level to the floor level of a doorway or like opening in a vehicle or building.

The existing practice is to support the platform of the mechanism by a linkage, which can be folded to stow the platform in a substantially vertical position within the vehicle or building, on two spaced pillars arranged to slide in vertical guideways in stanchions disposed one at each side of the doorway, power means being provided for raising the pillars to lift the platform from its loading level, e.g. on the ground, to floor level. The pillars must travel below floor level in order to lower the platform on to the loading level and, to provide for this, it is necessary either to mount the stanchions on the exterior of the vehicle or building or to cut the floor away to permit the pillars to extend downwardly below the stanchions. The former expedient is inconvenient because it introduces a cumbersome appearance and, in the case of a vehicle, it interferes with the provision of rearwardly opening doors, while the latter creates serious weaknesses in the body structure.

According to the invention, these disadvantages are overcome by connecting the platform and its folding linkage to a pair of subsidiary pillars which are connected to the pillars which slide in the stanchions by links which permit the secondary pillars to be projected outwardly clear of the floor of the vehicle or building and to be lowered sufficiently with respect to the pillars in the stanchions to bring the platform to loading level. With this construction the stanchions do not extend below floor level and are mounted within the vehicle or building

and the main pillars within the stanchions do not travel below floor level.

One embodiment of lifting platform according to the invention as applied to a vehicle will now be described in detail, by way of example, with reference to the accompanying drawing, in which:—

Fig. 1 is a side elevation showing the platform stowed within the vehicle,

Fig. 2 is a similar view showing the platform extended and at ground level,

Fig. 3 is a rear elevation showing the platform stowed,

Fig. 4 is an exploded perspective view showing certain of the parts and

Fig. 5 is a perspective view of the rear of the vehicle showing the platform partly lowered.

Two spaced substantially vertical stanchions 10 are provided at opposite sides of a doorway 11 in the rear wall of the vehicle. These extend only to floor level and accommodate main pillars 12 which can slide in the stanchions on rollers 13 (Fig. 4) from the upper position shown in Fig. 1 to the lower position shown in Fig. 2.

The platform 14, which may be made of angle iron sections and boarded with planking is hinged by pins 16 to the lower ends of subsidiary pillars 15 and connected at each side to the upper ends of the pillars 15 by folding links 17, 18. The pillars 15 are attached to the main pillars 12 by two pairs of links 19, 20 pivoted to the pillars 13 by pins 21 and 22 and to the pillars 12 by pins 23 and 24. It will be seen from Figs. 2 and 5 that this allows the platform 14 to throw clear of the vehicle floor and also permits the platform to be stowed compactly away as shown in Fig. 1.

The outward movement of the platform is controlled by guide wheels 25 on the vehicle and by stops 26 which are fixed to the pillars 15 which cooperate with the links 20. The pins 22 extend outwardly and, in the stowed posi-

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tion of the platform, engage in retaining notches 27 in plates 28 fixed to the stanchions 10 as shown in Fig. 1.

5 The pillars 12 are connected to the power unit 31 by suspension cables 29 which extend over pulleys 30 at the upper ends of the stanchions 10. The power unit 31 is shown disposed below the floor of the vehicle, but can be positioned at any other convenient place.

10 It may be of any desired construction but conveniently consists of an electric motor driving a hydraulic pump for supplying liquid to a ram for controlling the movement of the cables 29.

15 The platform 14 is balanced, so that it and the pillars 12 can readily be moved manually to project them from the stowed position, by springs 32 connected at their lower ends to the pillars 12 and at their upper ends to the links 19.

20 To extend and lower the platform from the stowed position it is necessary first to raise the pillars 12 in the stanchions 10 to free the pins 22 from the notches 27, and this is effected by the power unit 31. The platform can then be moved manually to the position shown in Fig. 5 and a valve is then opened to release the hydraulic pressure in the ram and allow the pillars 12 to descend by gravity in the stanchions 10 to lower the platform to ground level. After loading, the pillars 12 are raised hydraulically to bring the platform to floor level. After transfer of the load to the vehicle the pillars 12 are raised hydraulically to bring them to the top position in the stanchions 10, the platform is stowed manually and the valve is opened to allow the pins 22 to drop into the retaining notches 27.

WHAT WE CLAIM IS:—

40 1. A stowable lifting mechanism for raising loads from ground or other lower loading level

to the floor level of an opening in a vehicle or building, comprising substantially upright stanchions disposed on opposite sides of the opening, main pillars mounted to slide in the stanchions between an upper position and a lower position in which they are disposed above the floor level, subsidiary pillars which are connected to the main pillars by links, a load-receiving platform connected to the subsidiary pillars by folding linkages, said links permitting the secondary pillars to be projected outwardly clear of the floor and to be lowered sufficiently with respect to the main pillars to bring the platform to the loading level, and a power unit for raising the main pillars in the stanchions to lift the platform from the loading to the floor level.

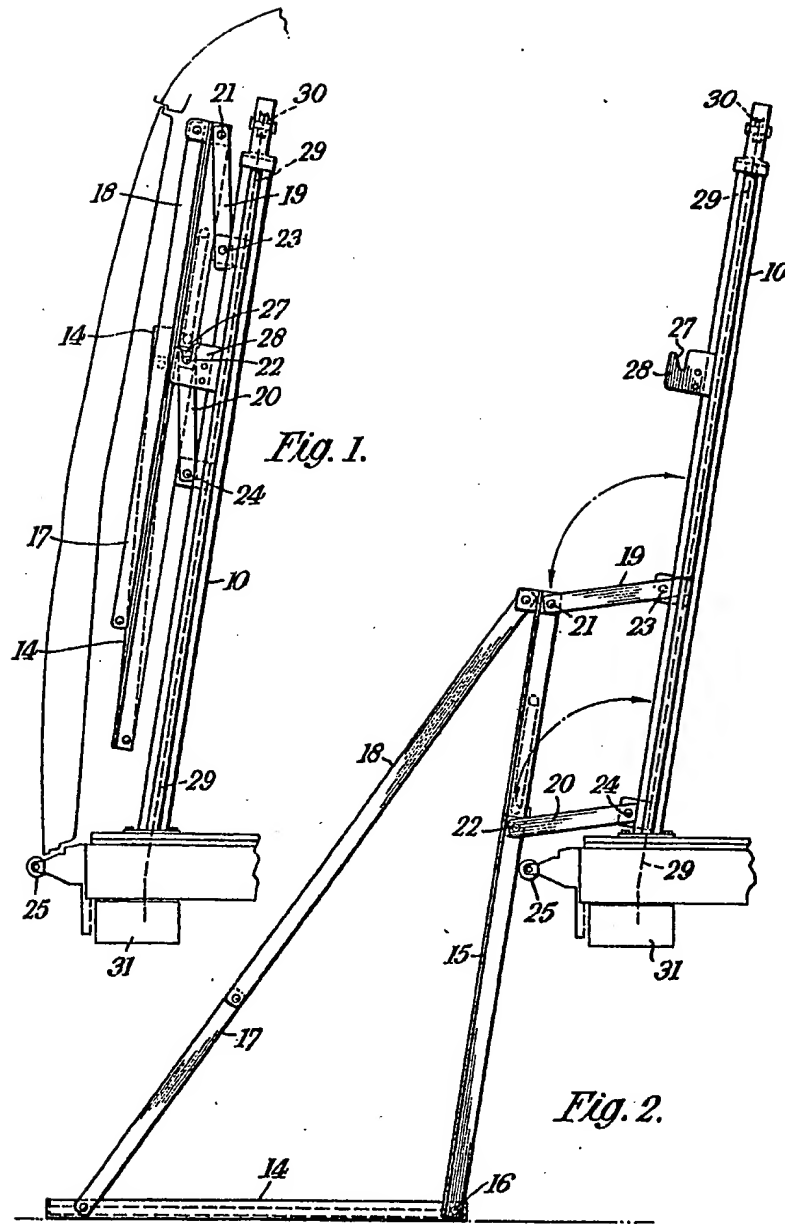
2. A lifting mechanism as claimed in claim 1, in which the subsidiary pillars carry pins which are engageable with retaining notches on the stanchions to retain the subsidiary pillars and the platform in stowed position.

3. A lifting mechanism as claimed in claim 1 or claim 2, in which the main pillars are connected to the power unit by cables extending over pulleys at the upper ends of the stanchions.

4. A lifting mechanism as claimed in any preceding claim, which includes balancing springs extending between the main pillars and the links connecting the subsidiary pillars to the main pillars.

5. A lifting mechanism as claimed in claim 1, substantially as described herein with reference to the accompanying drawings.

BREWER & SON,
Chartered Patent Agents,
5—9 Quality Court,
Chancery Lane,
London, W.C.2.



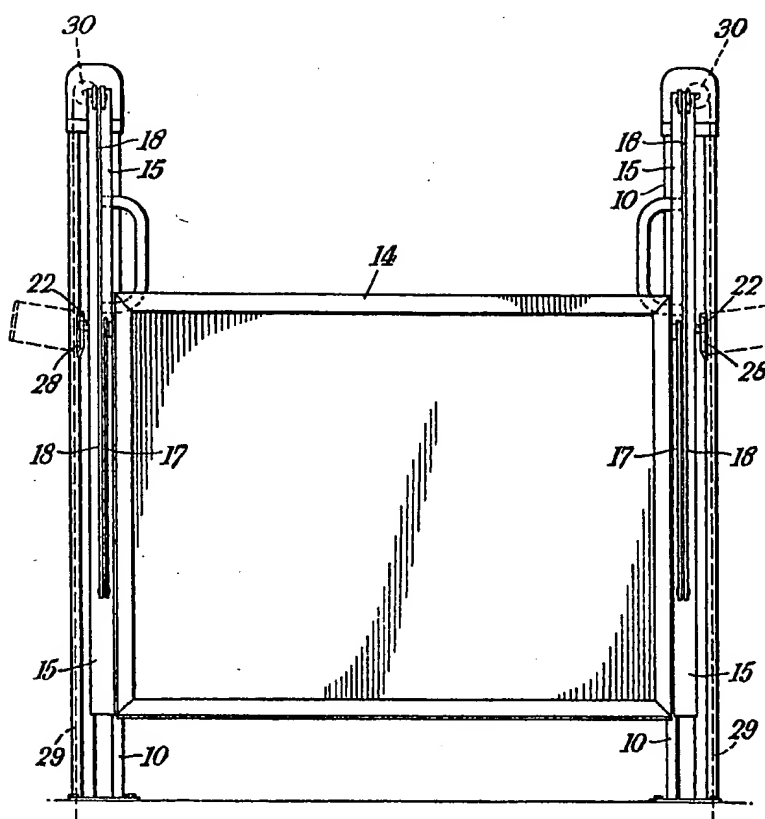


Fig. 3.

